

8.0 COORDINATION RESULTS & RECOMMENDATIONS

8.1 Coordination Results

Appendix A Table Tables A1 through A7 summarize the existing protective device settings that were recorded during the field investigation portion of the study. This data was incorporated into the SKM database as part of the Protective Device Coordination (PDC) portion of this study.

Time Current Characteristic (TCC) curves for the distribution system were analyzed at each of the major load centers. Where feeder breakers supplied load centers that in turn supplied downstream load centers, the TCC was extended to include the feeder overcurrent protective devices in the upstream load center.

Following each analysis are the plotted coordination curves, which graphically indicate the degree of coordination and protection. Each device curve is tagged with an identifying label for reference to the System Impedance Diagram. This label also references the device's specific manufacturer information, including ratings and settings, as indicated in the text box on each plot. The device time-current characteristics are truncated at maximum through-fault current for a downstream fault.

Areas where breaker trip curves overlap indicate areas of possible nonselective breaker operation. In some cases, because of device limitations, little can be done to improve selective coordination. Such device limitations include the fixed operating characteristic of a fuse, the built-in instantaneous or instantaneous "over-ride" elements of molded case circuit breakers, and the limited instantaneous trip range of trip units with an instantaneous trip function.

In cases involving redundant protective devices, non-selective breaker operation is of little or no concern. Protective devices are redundant if, regardless of which device opens, the same system outage occurs. Often, in order to improve overall system protection and coordination, redundant devices are intentionally set to overlap, i.e. to not selectively coordinate with one another.

8.2 Coordination Analysis

Table 8.2 below provides a list of all the Time-Current Curves (TCC) attached at the end of this section.

Table 8.2 - List of TCC Curves

TCC NAME	DESCRIPTION
TCC_001_TX_UTIL #1	Transformer UTIL #1*
TCC_002_TX_UTIL #2	Transformer UTIL #2*
TCC_003_TX_UTIL #3	Transformer UTIL #3*
TCC_004a_SWBD_SERVICE #1 ALTERNATE_ph	Switchboard SERVICE #1 ALTERNATE_ph*
TCC_004b_SWBD_SERVICE #1 ALTERNATE_ne	Switchboard SERVICE #1 ALTERNATE_ne*
TCC_005_TX_PPSS1	Transformer PPSS1*
TCC_006_TX_PPSS2	Transformer PPSS2*
TCC_007_MTR_CHILLER 3	Motor CHILLER 3
TCC_008a_SWBD_PPSS1_ph	Switchboard PPSS1_ph*
TCC_008b_SWBD_PPSS1_ne	Switchboard PPSS1_ne
TCC_010_PNL_H3	Panel H3*
TCC_011_PNL_H4	Panel H4
TCC_013_PNL_CTEQ	Panel CTEQ
TCC_017a_SWBD_SERVICE #2 PREFERRED_ph	Switchboard SERVICE #2 PREFERRED_ph*
TCC_017b_SWBD_SERVICE #2 PREFERRED_ne	Switchboard SERVICE #2 PREFERRED_ne
TCC_018_TX_U/S2-E	Transformer U/S2-E*
TCC_019_SWBD_CANCER CENTER SUB [P]	Switchboard CANCER CENTER SUB [P]*
TCC_020_PNL_DPN	Panel DPN*
TCC_021_TX_CATH LAB	Transformer CATH LAB*
TCC_022_PNL_CATH LAB/GEAR 3	Panel CATH LAB/GEAR 3
TCC_023_PNL_CLDP2	Panel CLDP2*
TCC_024_PNL_CL-UPS	Panel CL-UPS
TCC_025_TX_MATERNITY	Transformer MATERNITY*
TCC_026_SWGR_MATERNITY SUB	Switchgear MATERNITY SUB
TCC_028_PNL_DPE-DPN2	Panel DPE-DPN2*
TCC_029_PNL_NHMP1	Panel NHMP1
TCC_030_PNL_X-RAY GEAR 2	Panel X-RAY GEAR 2
TCC_031_PNL_XD4	Panel XD4*
TCC_032_TX_GEAR 1 F	Transformer GEAR 1 F*
TCC_033_SWBD_GEAR 1 F	Switchboard GEAR 1 F*
TCC_034_PNL_D41	Panel D41
TCC_035_PNL_DP1-4	Panel DP1-4*
TCC_036_PNL_D4	Panel D4*
TCC_037_TX_D2	Transformer D2

TCC NAME	DESCRIPTION
TCC_038_PNL_D2	Panel D2
TCC_039_PNL_DH4	Panel DH4*
TCC_040_TX_DH2	Transformer DH2
TCC_041_PNL_ICU [EMERG]	Panel ICU [EMERG]*
TCC_042_PNL_DGC	Panel DGC
TCC_043_TX_LA	Transformer LA
TCC_045_TX_GEAR 1 G	Transformer GEAR 1 G*
TCC_046_SWBD_GEAR 1 G	Switchboard GEAR 1 G*
TCC_047_PNL_ICU [NORMAL]	Panel ICU [NORMAL]
TCC_051_PNL_LD4	Panel LD4*
TCC_052_PNL_DIETARY [DK4]	Panel DIETARY [DK4]*
TCC_053_TX_DK2	Transformer DK2
TCC_054_PNL_PK2	Panel PK2
TCC_056_TX_MED SURGE	Transformer MED SURGE*
TCC_057_SWBD_MED SURGE	Switchboard MED SURGE*
TCC_058_PNL_MED SURGE [N]	Panel MED SURGE [N]
TCC_059_PNL_MED SURGE [E]	Panel MED SURGE [E]
TCC_060_SWBD_SERVICE #3	Switchboard SERVICE #3*
TCC_061_TX_DT-1	Transformer DT-1*
TCC_062a_SWGR_NP-LB-1_ph	Switchgear NP-LB-1_ph*
TCC_062b_SWGR_NP-LB-1_ne	Switchgear NP-LB-1_ne*
TCC_063_PNL_NP-BH	Panel NP-BH
TCC_064_PNL_NP-GH	Panel NP-GH
TCC_065_PNL_NP-1H	Panel NP-1H
TCC_066a_PNL_NP-PH_ph	Panel NP-PH_ph
TCC_066b_PNL_NP-PH_ne	Panel NP-PH_ne
TCC_067_TX_DT-2	Transformer DT-2*
TCC_068a_SWGR_NP-LB-2_ph	Switchgear NP-LB-2_ph
TCC_068b_SWGR_NP-LB-2_ne	Switchgear NP-LB-2_ne*
TCC_069_PNL_NP-2H	Panel NP-2H
TCC_070_PNL_NP-3H	Panel NP-3H
TCC_071_PNL_NP-5H	Panel NP-5H
TCC_072_TX_PPSS3	Transformer PPSS3*
TCC_073_SWBD_PPSS3	Switchboard PPSS3
TCC_074_GEN_GEN1	Generator GEN1
TCC_075_GEN_GEN2	Generator GEN2
TCC_076_GEN_GEN3	Generator GEN3
TCC_077_GEN_GEN4	Generator GEN4
TCC_078_SWGR_EXISTING E GEAR	Switchgear EXISTING E GEAR*
TCC_079_SWGR_GEN-3 GEAR	Switchgear GEN-3 GEAR
TCC_080_TX_U/S-2	Transformer U/S-2*
TCC_081_PNL_CANCER CENTER EMERG	Panel CANCER CENTER EMERG
TCC_082_PNL_DPLS	Panel DPLS*

TCC NAME	DESCRIPTION
TCC_083_PNL_DPCR	Panel DPCR*
TCC_084_PNL_LCR21	Panel LCR21
TCC_085_PNL_DPEQ	Panel DPEQ*
TCC_086_TX_EMERG-A [ET-1]	Transformer EMERG-A [ET-1]*
TCC_087a_SWGR_EMERG-A [SW#1]_ph	Switchgear EMERG-A [SW#1]_ph*
TCC_087b_SWGR_EMERG-A [SW#1]_ne	Switchgear EMERG-A [SW#1]_ne*
TCC_089_TX_BACKUP MED SURGE TX#1	Transformer BACKUP MED SURGE TX#1*
TCC_090_PNL_DPEEQ1	Panel DPEEQ1*
TCC_091_PNL_DPE	Panel DPE*
TCC_092_TX_EMERG-B [ET-2]	Transformer EMERG-B [ET-2]*
TCC_093a_SWGR_EMERG-B [SW#2]_ph	Switchgear EMERG-B [SW#2]_ph*
TCC_093b_SWGR_EMERG-B [SW#2]_ne	Switchgear EMERG-B [SW#2]_ne*
TCC_094-1_PNL_DPE ELEV [DAHOD]	Panel DPE ELEV [DAHOD]*
TCC_094-2_PNL_DPE ELEV [DAHOD]	Panel DPE ELEV [DAHOD]
TCC_095_PNL_DPEPH	Panel DPEPH*
TCC_096_PNL_DPEXR	Panel DPEXR*
TCC_097_PNL_ELEV [MS]	Panel ELEV [MS]*
TCC_098_MTR_ELEV 1	Motor ELEV 1
TCC_099_MTR_ELEV 2	Motor ELEV 2
TCC_100_MTR_ELEV 3	Motor ELEV 3
TCC_101_MTR_ELEV 4	Motor ELEV 4
TCC_102_PNL_EQ2 [MS]	Panel EQ2 [MS]*
TCC_103_SWGR_EMERG C	Switchgear EMERG C*
TCC_104_PNL_DPE CR1	Panel DPE CR1*
TCC_105_PNL_CR1HMP1	Panel CR1HMP1
TCC_106_PNL_DPE CR2	Panel DPE CR2
TCC_107_PNL_CR2HMP1	Panel CR2HMP1
TCC_108_PNL_DPE LS	Panel DPE LS
TCC_109_SWGR_MDPE [DAHOD]	Switchgear MDPE [DAHOD]*
TCC_110-1_SWGR_DPCBH1	Switchgear DPCBH1*
TCC_110-2_SWGR_DPCBH1	Switchgear DPCBH1
TCC_111_PNL_CBBH1	Panel CBBH1
TCC_112_PNL_CBGH1	Panel CBGH1*
TCC_113_PNL_CB2H1	Panel CB2H1*
TCC_114_PNL_CB1H1	Panel CB1H1*
TCC_115_PNL_CB3H1	Panel CB3H1*
TCC_116_PNL_CB5H1	Panel CB5H1*
TCC_117_SWGR_DPCBH4	Switchgear DPCBH4*
TCC_118_SWGR_DPLSH	Switchgear DPLSH*
TCC_119_SWGR_DPC BH3	Switchgear DPC BH3*
TCC_120_SWGR_DPCBH2	Switchgear DPCBH2*
TCC_121_PNL_CBBH2	Panel CBBH2
TCC_122_PNL_CBGH2	Panel CBGH2*

TCC NAME	DESCRIPTION
TCC_123_PNL_CB2H2	Panel CB2H2*
TCC_124_PNL_CB1H2	Panel CB1H2*
TCC_125_PNL_CB3H2	Panel CB3H2*
TCC_126_PNL_CB5H2	Panel CB5H2*
TCC_127_TX_EMERG-C [ET-3]	Transformer EMERG-C [ET-3]*

* Indicates TCC includes proposed settings

Transformer UTIL #1

TCC Curve: TCC_001_TX_UTIL #1

The secondary winding protective device for TX_UTIL #1 is coordinated to protect the transformer from damage.

In order to provide better protection to the transformer, the following settings changes for protective device RLY_SERVICE #1 - MAIN are recommended.

RLY_SERVICE #1 - MAIN

Trip Unit Element	Existing	Proposed
LDPU	1.5	1.2
I2T	22.5	40
SDPU	2.75	7.5
SDT	0.7	1.5
INST	15	20

Transformer UTIL #2

TCC Curve: TCC_002_TX_UTIL #2

The secondary winding protective device for TX_UTIL #2 is coordinated to protect the transformer from damage.

In order to provide better protection to the transformer, the following settings changes for protective device RLY_SERVICE #2 - MAIN are recommended.

RLY_SERVICE #2 - MAIN

Trip Unit Element	Existing	Proposed
LDPU	1.5	1.2
I2T	22.5	40
SDPU	2.75	7.5
SDT	0.7	1.5
INST	15	20

Transformer UTIL #3**TCC Curve: TCC_003_TX_UTIL #3**

The secondary winding protective device for TX_UTIL #3 is coordinated to protect the transformer from damage.

In order to provide better protection to the transformer, the following settings changes for protective device RLY_SERVICE #3 - MAIN are recommended.

RLY_SERVICE #3 - MAIN

Trip Unit Element	Existing	Proposed
LDPU	1	1.2
I2T	3	40
SDPU	8	7.5
SDT	0.5	1.5
INST	NONE	NONE

Switchboard SERVICE #1 ALTERNATE_ph

TCC Curve: TCC_004a_SWBD_SERVICE #1 ALTERNATE_ph

RLY_SERVICE #1 - MAIN and RLY_SERVICE#1 - SERVICE2 [TIE] are selectively coordinated with the immediately downstream feeder protective devices.

RLY_C-H ALT SWBD[E] is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

RLY_SERVICE#1 - SERVICE2 [TIE]

Trip Unit Element	Existing	Proposed
LDPU	1.5	1.1
I2T	22.5	35
SDPU	2.75	7
SDT	0.7	1.25
INST	15	17.5

Switchboard SERVICE #1 ALTERNATE_ne

TCC Curve: TCC_004b_SWBD_SERVICE #1 ALTERNATE_ne

RLY_SERVICE #1 - MAIN, RLY_SERVICE#1 - SERVICE2 [TIE], and RLY_C-H ALT SWBD[E] are selectively coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

RLY_SERVICE #1 - MAIN

Trip Unit Element	Existing	Proposed
LDPU	0.35	0.4
SDPU	0.4	0.5

RLY_SERVICE#1 - SERVICE2 [TIE]

Trip Unit Element	Existing	Proposed
LDPU	0.4	0.35
IT	10	9
SDPU	0.5	0.45
SDT	0.3	0.25

RLY_C-H ALT SWBD[E]

Trip Unit Element	Existing	Proposed
TAP	1.5	1.2

RLY_SERVICE #1 - T1-PPSS1

Trip Unit Element	Existing	Proposed
IT	30	7.5
SDT	0.25	0.2

RLY_SERVICE #1 - T2-PPSS2

Trip Unit Element	Existing	Proposed
IT	30	7.5
SDT	0.25	0.2

Transformer PPSS1

TCC Curve: TCC_005_TX_PPSS1

The primary winding protective device for TX_PPSS1 is adequately sized at 300 Amps.

The secondary winding protective device for TX_PPSS1 is not coordinated to protect the transformer from damage.

The primary protective device is coordinated for the transformer inrush current.

In order to provide better protection to the transformer, the following settings changes for protective device RLY_SERVICE #1 - T1-PPSS1, BKR_XSB PPSS1, and BKR_PPSS1 - MAIN are recommended.

RLY_SERVICE #1 - T1-PPSS1

Trip Unit Element	Existing	Proposed
I2T	15	30
SDPU	2.5	6
SDT	0.45	1
INST	12.5	15

BKR_XSB PPSS1

Trip Unit Element	Existing	Proposed
LTPU	1	0.77
LTD	6	33
STPU	1.5	4.66
STD	0.11	0.05
INST	15	6

BKR_PPSS1 - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1	0.75
LTD	2	10.5
STPU	2	6.5
STD	0.15	0.2
INST	OFF	4.5

Transformer PPSS2

TCC Curve: TCC_006_TX_PPSS2

The primary winding protective device for TX_PPSS2 is adequately sized at 300 Amps.

The secondary winding protective device for TX_PPSS2 is not coordinated to protect the transformer from damage.

The primary protective device is coordinated for the transformer inrush current.

In order to provide better protection to the transformer, the following settings changes for protective device RLY_SERVICE #1 - T2-PPSS2, BKR_XSB PPSS2, and BKR_1500 HP CHILLER are recommended.

The cable originating from BKR_XSB PPSS2 does not meet the ampacity required by the NEC.

RLY_SERVICE #1 - T2-PPSS2

Trip Unit Element	Existing	Proposed
SDPU	2.5	2.75

BKR_XSB PPSS2

Trip Unit Element	Existing	Proposed
LTPU	1	0.74
LTD	6	9
STPU	2.02	1.76
INST	15	2.66

BKR_1500 HP CHILLER

Trip Unit Element	Existing	Proposed
LTPU	0.8	0.75
STPU	1.5	2.5

Motor CHILLER 3

TCC Curve: TCC_007_MTR_CHILLER 3

It is the opinion of CEPES that motor MTR_CHILLER 3 is fully protected.

The revised TCC shows the effect of recommendations made in TCC_006_TX_PPSS2.

Switchboard PPSS1_ph

TCC Curve: TCC_008a_SWBD_PPSS1_ph

BKR_PPSS1 - MAIN is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The cable originating from BKR_PPSS1 - CHILLER#1 does not meet the ampacity required by the NEC.

The cable originating from BKR_PPSS1 - CHILLER#2 does not meet the ampacity required by the NEC.

BKR_PPSS1 - CHILLER#1

Trip Unit Element	Existing	Proposed
LTPU	1	0.6
LTD	2	5
STPU	1.5	3

BKR_CHILLER#1 VFD

Trip Unit Element	Existing	Proposed
LTD	18	17.15
STPU	5	2.51

BKR_PPSS1 - CHILLER#2

Trip Unit Element	Existing	Proposed
LTPU	1	0.75
BKR_PPSS1 - CHILLER#2	STPU	1.5

2.5

Trip Unit Element	Existing	Proposed
BKR_CHILLER#2 VFD	LTD	18

17.15

Trip Unit Element	Existing	Proposed
BKR_CHILLER#2 VFD	STPU	5

2.51

Trip Unit Element	Existing	Proposed
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Switchboard PPSS1_ne

TCC Curve: TCC_008b_SWBD_PPSS1_ne

BKR_PPSS1 - MAIN is selectively coordinated with the immediately downstream feeder protective devices.

Panel H3

TCC Curve: TCC_010_PNL_H3

BKR_PPSS1 - BOILER PLANT H3 and BKR_MDPE - ATS BOILER [E] are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

Further improvements could be made to the coordination of BKR_MDPE - ATS BOILER [E] with equipment changes.

BKR_MDPE - ATS BOILER [E]

Trip Unit Element	Existing	Proposed
LTD	2	10
STPU	4	6
STD	0.2	0.1
INST	2	6

BKR_H3 - H4

Trip Unit Element	Existing	Proposed
INST	10	5

Panel H4

TCC Curve: TCC_011_PNL_H4

BKR_H3 - H4 is fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

The revised TCC shows the effect of recommendations made in TCC_010_PNL_H3.

Panel CTEQ

TCC Curve: TCC_013_PNL_CTEQ

BKR_PPSS1 - CTEQ ATS and BKR_PPSS3 - CTEQ are fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

Switchboard SERVICE #2 PREFERRED_ph

TCC Curve: TCC_017a_SWBD_SERVICE #2 PREFERRED_ph

RLY_SERVICE #2 - MAIN and RLY_SERVICE#1 - SERVICE2 [TIE] are selectively coordinated with the immediately downstream feeder protective devices.

RLY_C-H PRF SWBD[E] is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The cable originating from BKR_SERVICE #2 - MED-SURG D[N] does not meet the ampacity required by the NEC.

The cable originating from BKR_SERVICE #2 - MED-SURGE [E] does not meet the ampacity required by the NEC.

RLY_C-H PRF SWBD[E]

Trip Unit Element	Existing	Proposed
TAP	5	4
TIME DIAL	1	10

Switchboard SERVICE #2 PREFERRED_ne

TCC Curve: TCC_017b_SWBD_SERVICE #2 PREFERRED_ne

RLY_SERVICE #2 - MAIN, RLY_SERVICE#1 - SERVICE2 [TIE], and RLY_C-H PRF SWBD[E] are selectively coordinated with the immediately downstream feeder protective devices.

The revised TCC shows the effect of recommendations made in TCC_004b_SWBD_SERVICE #1 ALTERNATE_ne.

Transformer U/S2-E

TCC Curve: TCC_018_TX_U/S2-E

The primary winding protective device for TX_U/S2-E is adequately sized at 200 Amps.

The secondary winding protective device for TX_U/S2-E is not coordinated to protect the transformer from damage.

The primary protective device is coordinated for the transformer inrush current.

In order to provide better protection to the transformer, the following settings changes for protective device RLY_SERVICE #2 - CANCER CENTER and BKR_CANCER CENTER - MAIN are recommended.

RLY_SERVICE #2 - CANCER CENTER

Trip Unit Element	Existing	Proposed
LDPU	1	0.4
I2T	15	4.5
SDPU	2	1.75

BKR_CANCER CENTER - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1	0.8
LTD	4	2
STPU	9	5
I2T	OUT	IN

Switchboard CANCER CENTER SUB [P]

TCC Curve: TCC_019_SWBD_CANCER CENTER SUB [P]

BKR_CANCER CENTER - MAIN and BKR_CANCER CENTER - TIE are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_CANCER CENTER - TIE

Trip Unit Element	Existing	Proposed
LTPU	1	0.6
LTD	3	2
STPU	4	5
STD	MAX	INT
I ^{AS}	OFF	ON
INST	7	10.5

BKR_CANCER CENTER - ATS CR

Trip Unit Element	Existing	Proposed
LTPU	1	0.8
STPU	9	8.4
STD	3	2
I ^{AT}	OFF	ON

BKR_CANCER CENTER - ATS EQ

Trip Unit Element	Existing	Proposed
LTPU	1	0.8
STPU	9	8
STD	3	4
INST	4	8

BKR_CANCER CENTER - DNPH

Trip Unit Element	Existing	Proposed
INST	9	7

Panel DPN**TCC Curve: TCC_020_PNL_DPN**

BKR_CANCER CENTER - DPN is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_CANCER CENTER - DPN

Trip Unit Element	Existing	Proposed
LTPU	1	0.7
INST	4	7.5

Transformer CATH LAB

TCC Curve: TCC_021_TX_CATH LAB

The primary winding protective device for TX_CATH LAB is adequately sized at 300 Amps.

The secondary winding protective device for TX_CATH LAB is not coordinated to protect the transformer from damage.

The primary protective device is coordinated for the transformer inrush current.

In order to provide better protection to the transformer, the following settings changes for protective device RLY_SERVICE #2 - CATHLAB/GEAR3 and BKR_CATH LAB/GEAR 3 - MAIN are recommended.

RLY_SERVICE #2 - CATHLAB/GEAR3

Trip Unit Element	Existing	Proposed
LDPU	1	0.7
SDPU	2	5

BKR_CATH LAB/GEAR 3 - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1	0.9
STPU	6	7

Panel CATH LAB/GEAR 3

TCC Curve: TCC_022_PNL_CATH LAB/GEAR 3

BKR_CATH LAB/GEAR 3 - MAIN is fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

The revised TCC shows the effect of recommendations made in TCC_021_TX_CATH LAB.

Panel CLDP2**TCC Curve: TCC_023_PNL_CLDP2**

BKR_CLDP2 - MAIN is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_CATHLAB - CLDP2

Trip Unit Element	Existing	Proposed
STPU	6	8
INST	8	7.5

Panel CL-UPS**TCC Curve: TCC_024_PNL_CL-UPS**

BKR_CLDP2 - CL-UPS is not coordinated with the immediately downstream feeder protective devices.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

Transformer MATERNITY**TCC Curve: TCC_025_TX_MATERNITY**

The primary winding protective device for TX_MATERNITY is adequately sized at 500 Amps.

The secondary winding protective device for TX_MATERNITY is not coordinated to protect the transformer from damage.

The primary protective device may not be coordinated for the transformer inrush current. This could cause the protective device to activate upon energization of the transformer.

In order to provide better protection to the transformer, the following settings changes for protective device BKR_MATERNITY - MAIN are recommended.

BKR_MATERNITY - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1	0.5
LTD	4	2
STPU	3	9

Switchgear MATERNITY SUB

TCC Curve: TCC_026_SWGR_MATERNITY SUB

BKR_MATERNITY - MAIN is fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

The revised TCC shows the effect of recommendations made in TCC_025_TX_MATERNITY.

Panel DPE-DPN2

TCC Curve: TCC_028_PNL_DPE-DPN2

BKR_CATHLAB - DPE-DPN2 is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

The cable originating from BKR_DPE-DPN2 - EQ1 ATS does not meet the ampacity required by the NEC.

BKR_DPE-DPN2 - EQ1 ATS

Trip Unit Element	Existing	Proposed
INST	10	5.25

BKR_DPE-DPN2 - EQ2 ATS

Trip Unit Element	Existing	Proposed
INST	10	8.48

BKR_DPE-DPN2 - ELEV ATS

Trip Unit Element	Existing	Proposed
INST	10	5

Panel NHMP1**TCC Curve: TCC_029_PNL_NHMP1**

BKR_DPE-DPN2 - NHMP1[XRAY] is not coordinated with the immediately downstream feeder protective devices.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

Panel X-RAY GEAR 2**TCC Curve: TCC_030_PNL_X-RAY GEAR 2**

BKR_CATHLAB - X-RAY GEAR 2 is not coordinated with the immediately downstream feeder protective devices.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

The revised TCC shows the effect of recommendations made in TCC_031_PNL_XD4.

The cable originating from BKR_GEAR 2 - A SHAFT LTG does not meet the ampacity required by the NEC.

Panel XD4**TCC Curve: TCC_031_PNL_XD4**

BKR_GEAR 2 - XD4 [XRAY] is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The cable originating from BKR_XD4 - UNKNOWN does not meet the ampacity required by the NEC.

BKR_GEAR 2 - XD4 [XRAY]

Trip Unit Element	Existing	Proposed
INST	4	5.36

Transformer GEAR 1 F

TCC Curve: TCC_032_TX_GEAR 1 F

The primary winding protective device for TX_GEAR 1 F is adequately sized at 300 Amps.

The secondary winding protective device for TX_GEAR 1 F is not coordinated to protect the transformer from damage.

The primary protective device is coordinated for the transformer inrush current.

In order to provide better protection to the transformer, the following settings changes for protective device RLY_SERVICE #2 - GEAR 1 F and BKR_GEAR 1 F - MAIN are recommended.

RLY_SERVICE #2 - GEAR 1 F

Trip Unit Element	Existing	Proposed
LDPU	1	0.35
I2T	15	3.5

BKR_GEAR 1 F - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1	0.62
LTD	2.5	6.5
INST	3	5.46

Switchboard GEAR 1 F

TCC Curve: TCC_033_SWBD_GEAR 1 F

BKR_GEAR 1 F - MAIN and BKR_GEAR 1 F - GEAR 1 G [TIE] are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The cable originating from BKR_GEAR 1 F - O.R. SUITE DIST does not meet the ampacity required by the NEC.

The cable originating from BKR_GEAR 1 F - LSE does not meet the ampacity required by the NEC.

BKR_GEAR 1 F - GEAR 1 G [TIE]

Trip Unit Element	Existing	Proposed
LTPU	0.7	0.49
LTD	20	6.5
INST	2.19	5.47

BKR_GEAR 1 F - D41

Trip Unit Element	Existing	Proposed
LTPU	1600	605
LTD	10	9.5
INST	2	5.5

BKR_GEAR 1 F - DGC

Trip Unit Element	Existing	Proposed
LTPU	1	0.8
CURRENT SETTING	1	0.5
LTD	3	1
INST	4	2

Panel D41**TCC Curve: TCC_034_PNL_D41**

BKR_GEAR 1 F - D41 is fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

The revised TCC shows the effect of recommendations made in TCC_033_SWBD_GEAR 1 F, TCC_035_PNL_DP1-4, and TCC_036_PNL_D4.

The cable originating from BKR_GEAR 1 F - D41 does not meet the ampacity required by the NEC.

Panel DP1-4**TCC Curve: TCC_035_PNL_DP1-4**

BKR_D41 - DP1-4 is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

BKR_D41 - DP1-4

Trip Unit Element	Existing	Proposed
INST	LO	8

Panel D4**TCC Curve: TCC_036_PNL_D4**

BKR_D41 - D4 is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

BKR_D41 - D4

Trip Unit Element	Existing	Proposed
INST	LO	6.28

Transformer D2**TCC Curve: TCC_037_TX_D2**

The primary winding protective device for TX_D2 is adequately sized at 250 Amps.

The secondary winding protective device for TX_D2 is not coordinated to protect the transformer from damage.

The primary protective device may not be coordinated for the transformer inrush current. This could cause the protective device to activate upon energization of the transformer.

The existing settings provide the best possible protection given the existing protective device, further improvements could be made with equipment changes.

Panel D2

TCC Curve: TCC_038_PNL_D2

BKR_D2 - MAIN is fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

Panel DH4**TCC Curve: TCC_039_PNL_DH4**

BKR_GEAR 1 F - DH4 is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

BKR_GEAR 1 F - DH4

Trip Unit Element	Existing	Proposed
LTD	4	24
STPU	6	12

Transformer DH2**TCC Curve: TCC_040_TX_DH2**

The primary winding protective device for TX_DH2 is adequately sized at 200 Amps.

The secondary winding protective device for TX_DH2 is not required.

The primary protective device may not be coordinated for the transformer inrush current. This could cause the protective device to activate upon energization of the transformer.

The existing settings provide the best possible protection given the existing protective device, further improvements could be made with equipment changes.

Panel ICU [EMERG]

TCC Curve: TCC_041_PNL_ICU [EMERG]

BKR_GEAR 1 F - ICU is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The cable originating from BKR_GEAR 1 F - ICU does not meet the ampacity required by the NEC.

BKR_GEAR 1 F - ICU

Trip Unit Element	Existing	Proposed
LTPU	0.6	0.99
LTD	5	6
INST	10	5.18

Panel DGC**TCC Curve: TCC_042_PNL_DGC**

BKR_GEAR 1 F - DGC is fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

The revised TCC shows the effect of recommendations made in TCC_033_SWBD_GEAR 1 F.

The cable originating from BKR_GEAR 1 F - DGC does not meet the ampacity required by the NEC.

Transformer LA**TCC Curve: TCC_043_TX_LA**

The primary winding protective device for TX_LA is adequately sized at 100 Amps.

The secondary winding protective device for TX_LA is not required. However, the primary winding protective device is coordinated to protect the transformer from damage.

The primary protective device may not be coordinated for the transformer inrush current. This could cause the protective device to activate upon energization of the transformer.

The existing settings provide the best possible protection given the existing protective device, further improvements could be made with equipment changes.

Transformer GEAR 1 G

TCC Curve: TCC_045_TX_GEAR 1 G

The primary winding protective device for TX_GEAR 1 G is adequately sized at 300 Amps.

The secondary winding protective device for TX_GEAR 1 G is not coordinated to protect the transformer from damage.

The primary protective device is coordinated for the transformer inrush current.

In order to provide better protection to the transformer, the following settings changes for protective device RLY_SERVICE #2 - GEAR 1 G and BKR_GEAR 1 G - MAIN are recommended.

RLY_SERVICE #2 - GEAR 1 G

Trip Unit Element	Existing	Proposed
LDPU	1	0.4
I2T	15	5
SDPU	2	2.25
SDT	0.15	0.2

BKR_GEAR 1 G - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1.4	1.29
STPU	3.5	5

Switchboard GEAR 1 G

TCC Curve: TCC_046_SWBD_GEAR 1 G

BKR_GEAR 1 G - MAIN and BKR_GEAR 1 F - GEAR 1 G [TIE] are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The cable originating from BKR_GEAR 1 G - DRLHB1 does not meet the ampacity required by the NEC.

The cable originating from BKR_GEAR 1 G - ICU ATS EQ3 does not meet the ampacity required by the NEC.

The cable originating from BKR_GEAR 1 G - NEW AC[ATS CRH] does not meet the ampacity required by the NEC.

BKR_GEAR 1 G - ICU ATS EQ3

Trip Unit Element	Existing	Proposed
LTPU	1.1	1
LTD	4	1
STPU	9	4.5
STD	MAX	MIN

BKR_GEAR 1 G - ICU

Trip Unit Element	Existing	Proposed
INST	10L	5L

BKR_GEAR 1 G - DRLHB1

Trip Unit Element	Existing	Proposed
LTPU	1	0.51
LTD	30	2.5
INST	12	7.84

BKR_GEAR 1 G - DIETARY (DK4)

Trip Unit Element	Existing	Proposed
LTPU	0.67	1
LTD	10	6.5
INST	6	5.16

Panel ICU [NORMAL]**TCC Curve: TCC_047_PNL_ICU [NORMAL]**

BKR_GEAR 1 G - ICU is not coordinated with the immediately downstream feeder protective devices.

The revised TCC shows the effect of recommendations made in TCC_046_SWBD_GEAR 1 G.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with further investigation.

The cable originating from BKR_GEAR 1 G - ICU does not meet the ampacity required by the NEC.

Panel LD4

TCC Curve: TCC_051_PNL_LD4

BKR_GEAR 1 G - LD4 is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The cable originating from BKR_GEAR 1 G - LD4 does not meet the ampacity required by the NEC.

The cable originating from BKR_LD4 - LD2 does not meet the ampacity required by the NEC.

BKR_GEAR 1 G - LD4

Trip Unit Element	Existing	Proposed
LTD	10	7
INST	2	4

Panel DIETARY [DK4]**TCC Curve: TCC_052_PNL_DIETARY [DK4]**

BKR_GEAR 1 G - DIETARY (DK4) is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

BKR_DIETARY - DK2

Trip Unit Element	Existing	Proposed
INST	HI	8.59

Transformer DK2**TCC Curve: TCC_053_TX_DK2**

The primary winding protective device for TX_DK2 is adequately sized at 250 Amps.

The secondary winding protective device for TX_DK2 is not coordinated to protect the transformer from damage.

The primary protective device may not be coordinated for the transformer inrush current. This could cause the protective device to activate upon energization of the transformer.

The revised TCC shows the effect of recommendations made in TCC_052_PNL_DIETARY [DK4].

The existing settings provide the best possible protection given the existing protective device, further improvements could be made with equipment changes.

The cable originating from BKR_DK2 - KP1 does not meet the ampacity required by the NEC.

Panel PK2

TCC Curve: TCC_054_PNL_PK2

BKR_PK2 - MAIN is not coordinated with the immediately downstream feeder protective devices.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

Transformer MED SURGE

TCC Curve: TCC_056_TX_MED SURGE

The primary winding protective device for TX_MED SURGE is not adequately sized at 200 Amps. NEC Table 450.3(A) requires the primary protective device, FU_DSC_MED SURGE, be no more than 300% of the transformer primary winding rated current of 41.6 Amps.

The secondary winding protective device for TX_MED SURGE is not coordinated to protect the transformer from damage.

The primary protective device is coordinated for the transformer inrush current.

In order to provide better protection to the transformer, the following settings changes for protective device BKR_MED SURGE - MAIN are recommended.

The existing settings provide the best possible protection given the existing protective device, further improvements could be made with equipment changes.

BKR_MED SURGE - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1600	1280
DELAY	MAX	MIN

Switchboard MED SURGE

TCC Curve: TCC_057_SWBD_MED SURGE

BKR_MED SURGE - MAIN is selectively coordinated with the immediately downstream feeder protective devices.

The revised TCC, including BKR_MED SURGE [EMERG] - MAIN and BKR_MED SURGE [NORMAL] - MAIN recommendations, show the effect of recommendations made in TCC_056_TX_MED SURGE.

BKR_MED SURGE [EMERG] - MAIN

Trip Unit Element	Existing	Proposed
INST	HIGH	LOW

BKR_MED SURGE [NORMAL] - MAIN

Trip Unit Element	Existing	Proposed
INST	HIGH	LOW

Panel MED SURGE [N]**TCC Curve: TCC_058_PNL_MED SURGE [N]**

BKR_MED SURGE [NORMAL] - MAIN is not coordinated with the immediately downstream feeder protective devices.

The revised TCC show the effect of recommendations made in TCC_057_SWBD_MED SURGE.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

The cable originating from BKR_MED SURGE [N] - LG1 does not meet the ampacity required by the NEC.

The cable originating from BKR_MED SURGE [N] - LG2C does not meet the ampacity required by the NEC.

The cable originating from BKR_MED SURGE [N] - MS3 ELEV does not meet the ampacity required by the NEC.

The cable originating from BKR_MED SURGE [N] - GEN_BACKUP does not meet the ampacity required by the NEC.

Panel MED SURGE [E]**TCC Curve: TCC_059_PNL_MED SURGE [E]**

BKR_DSC_MED SURGE [E] is not coordinated with the immediately upstream feeder protective devices.

The revised TCC show the effect of recommendations made in TCC_057_SWBD_MED SURGE.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with further investigation.

The cable originating from BKR_DSC_MED SURGE [E] does not meet the ampacity required by the NEC.

Switchboard SERVICE #3

TCC Curve: TCC_060_SWBD_SERVICE #3

RLY_SERVICE #3 - MAIN is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

RLY_SERVICE #3 - DT-1

Trip Unit Element	Existing	Proposed
I2T	10	27.5
SDPU	3.5	5.5
INST	10	20

RLY_SERVICE #3 - DT-2

Trip Unit Element	Existing	Proposed
LDPU	1	0.95
I2T	10	27.5
SDPU	3.5	5.5
INST	10	15

RLY_SERVICE #3 - PPSS3

Trip Unit Element	Existing	Proposed
LDPU	1	0.55
I2T	3	9
SDPU	6	3.5

Transformer DT-1

TCC Curve: TCC_061_TX_DT-1

The primary winding protective device for TX_DT-1 is adequately sized at 300 Amps.

The secondary winding protective device for TX_DT-1 is not coordinated to protect the transformer from damage.

The primary protective device may not be coordinated for the transformer inrush current. This could cause the protective device to activate upon energization of the transformer.

In order to provide better protection to the transformer, the following settings changes for protective device BKR_DT-1 - NP-LB-1 and BKR_NP-LB-1 - MAIN are recommended.

BKR_DT-1 - NP-LB-1

Trip Unit Element	Existing	Proposed
LTPU	1	0.75
LTD	3	36
STPU	1.5	4

BKR_NP-LB-1 - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1	0.75
LTD	6	9
STPU	1.5	5.5
STD	0.3	0.4

Switchgear NP-LB-1_ph

TCC Curve: TCC_062a_SWGR_NP-LB-1_ph

BKR_NP-LB-1 - NP-PH is not coordinated with the immediately upstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_NP-LB-1 - NP-LB-2 [TIE]

Trip Unit Element	Existing	Proposed
LTPU	1	0.65
LTD	6	7
STPU	1.5	5.5

Switchgear NP-LB-1 ne

TCC Curve: TCC_062b_SWGR_NP-LB-1_ne

BKR_NP-LB-1 - NP-PH is not coordinated with the immediately upstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_NP-LB-1 - MAIN

Trip Unit Element	Existing	Proposed
GFPD	0.25	0.32
GFD	0.35	0.4

BKR_NP-LB-1 - NP-LB-2 [TIE]

Trip Unit Element	Existing	Proposed
GFD	0.35	0.3

BKR_NP-LB-1 - NP-PH

Trip Unit Element	Existing	Proposed
GFD	0.3	0.2

Panel NP-BH

TCC Curve: TCC_063_PNL_NP-BH

BKR_NP-LB-1 - NP-BH is selectively coordinated with the immediately downstream feeder protective devices.

Panel NP-GH

TCC Curve: TCC_064_PNL_NP-GH

BKR_NP-LB-1 - NP-GH is selectively coordinated with the immediately downstream feeder protective devices.

Panel NP-1H

TCC Curve: TCC_065_PNL_NP-1H

BKR_NP-LB-1 - NP-1H is selectively coordinated with the immediately downstream feeder protective devices.

Panel NP-PH_ph

TCC Curve: TCC_066a_PNL_NP-PH_ph

BKR_NP-LB-1 - NP-PH is fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

The revised TCC shows the effect of recommendations made in TCC_062a_SWGR_NP-LB-1_ph.

Panel NP-PH_ne**TCC Curve: TCC_066b_PNL_NP-PH_ne**

BKR_NP-LB-1 - NP-PH is selectively coordinated with the immediately downstream feeder protective devices.

The revised TCC shows the effect of recommendations made in TCC_062b_SWGR_NP-LB-1_ne.

Transformer DT-2

TCC Curve: TCC_067_TX_DT-2

The primary winding protective device for TX_DT-2 is adequately sized at 300 Amps.

The secondary winding protective device for TX_DT-2 is not coordinated to protect the transformer from damage.

The primary protective device may not be coordinated for the transformer inrush current. This could cause the protective device to activate upon energization of the transformer.

In order to provide better protection to the transformer, the following settings changes for protective device BKR_DT-2 - NP-LB-2 and BKR_NP-LB-2 - MAIN are recommended.

BKR_DT-2 - NP-LB-2

Trip Unit Element	Existing	Proposed
LTPU	1	0.725
LTD	3	36
STPU	1.5	4

BKR_NP-LB-2 - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1	0.75
LTD	6	9
STPU	1.5	5.5
STD	0.3	0.4

Switchgear NP-LB-2_ph**TCC Curve: TCC_068a_SWGR_NP-LB-2_ph**

BKR_NP-LB-2 - MAIN and BKR_NP-LB-1 - NP-LB-2 [TIE] are selectively coordinated with the immediately downstream feeder protective devices.

The revised TCC shows the effect of recommendations made in TCC_062a_SWGR_NP-LB-1_ph, TCC_067_TX_DT-2, TCC_090_PNL_DPEEQ1, and TCC_096_PNL_DPEXR.

Switchgear NP-LB-2 ne

TCC Curve: TCC_068b_SWGR_NP-LB-2_ne

BKR_NP-LB-2 - MAIN and BKR_NP-LB-1 - NP-LB-2 [TIE] are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_NP-LB-2 - MAIN

Trip Unit Element	Existing	Proposed
GFPD	0.25	0.32
GFD	0.35	0.4

BKR_NP-LB-2 - ATS XR

Trip Unit Element	Existing	Proposed
GFD	0.5	0.2

Panel NP-2H

TCC Curve: TCC_069_PNL_NP-2H

BKR_NP-LP-2 - NP-2H is selectively coordinated with the immediately downstream feeder protective devices.

Panel NP-3H

TCC Curve: TCC_070_PNL_NP-3H

BKR_NP-LP-2 - NP-3H is selectively coordinated with the immediately downstream feeder protective devices.

Panel NP-5H

TCC Curve: TCC_071_PNL_NP-5H

BKR_NP-LP-2 - NP-5H is selectively coordinated with the immediately downstream feeder protective devices.

Transformer PPSS3**TCC Curve: TCC_072_TX_PPSS3**

The primary winding protective device for TX_PPSS3 is adequately sized at 200 Amps.

The secondary winding protective device for TX_PPSS3 is not coordinated to protect the transformer from damage.

The primary protective device is coordinated for the transformer inrush current.

In order to provide better protection to the transformer, the following settings changes for protective device BKR_PPSS3 - MAIN are recommended.

BKR_PPSS3 - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1	0.75
LTD	2	9.5
STPU	2.5	6.5

Switchboard PPSS3

TCC Curve: TCC_073_SWBD_PPSS3

BKR_PPSS3 - MAIN is selectively coordinated with the immediately downstream feeder protective devices.

The revised TCC shows the effect of recommendations made in TCC_072_TX_PPSS3.

The cable originating from BKR_PPSS3 - VFD-8 does not meet the ampacity required by the NEC.

The cable originating from BKR_PPSS3 - VFD-9 does not meet the ampacity required by the NEC.

Generator GEN1

TCC Curve: TCC_074_GEN_GEN1

It is the opinion of CEPES that generator GEN_GEN1 is fully protected.

Generator GEN2

TCC Curve: TCC_075_GEN_GEN2

It is the opinion of CEPES that generator GEN_GEN2 is fully protected.

Generator GEN3

TCC Curve: TCC_076_GEN_GEN3

It is the opinion of CEPES that generator GEN_GEN3 is fully protected.

The cable originating from FU_DSC_GEN3 does not meet the ampacity required by the NEC.

Generator GEN4

TCC Curve: TCC_077_GEN_GEN4

It is the opinion of CEPES that generator GEN_GEN4 is fully protected.

Switchgear EXISTING E GEAR**TCC Curve: TCC_078_SWGR_EXISTING E GEAR**

Under the assumption that all three generators are running during emergency operation, it is the opinion of CEPES that RLY_E GEAR - CANCER CENTER [A] is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

RLY_E GEAR - CANCER CENTER [A]

Trip Unit Element	Existing	Proposed
TIME DIAL	2	3

Switchgear GEN-3 GEAR**TCC Curve: TCC_079_SWGR_GEN-3 GEAR**

Under the assumption that all three generators are running during emergency operation, it is the opinion of CEPES that RLY_GEN2 - EXISTING E GEAR, RLY_GEN1 - EXISTING E GEAR, and RLY_GEN3 - GEN 3 GEAR are fully coordinated with the immediately downstream feeder protective devices.

The revised TCC shows the effect of recommendations made in TCC_017a_SWBD_SERVICE #2 PREFERRED_ph.

The cable originating from BKR_GEN3 GEAR - LOAD BANK does not meet the ampacity required by the NEC.

Transformer U/S-2

TCC Curve: TCC_080_TX_U/S-2

The primary winding protective device for TX_U/S-2 is adequately sized at 200 Amps.

The secondary winding protective device for TX_U/S-2 is not coordinated to protect the transformer from damage.

The primary protective device is coordinated for the transformer inrush current.

In order to provide better protection to the transformer, the following settings changes for protective device BKR_CANCER CENTER EMERG - MAIN are recommended.

BKR_CANCER CENTER EMERG - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1	0.75
LTD	4	2
STD	INT	MAX
I ^Δ S	OFF	ON
INST	8	13.5

Panel CANCER CENTER EMERG**TCC Curve: TCC_081_PNL_CANCER CENTER EMERG**

BKR_CANCER CENTER EMERG - MAIN and BKR_CANCER CENTER - TIE are fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

The revised TCC shows the effect of recommendations made in TCC_080_TX_U/S-2, TCC_082_PNL_DPLS, TCC_083_PNL_DPCR, and TCC_085_PNL_DPEQ.

Panel DPLS

TCC Curve: TCC_082_PNL_DPLS

BKR_CANCER CENTER - ATS LS and BKR_CANCER CENTER - LS are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

BKR_CANCER CENTER - ATS LS

Trip Unit Element	Existing	Proposed
INST	8	10

BKR_CANCER CENTER - LS

Trip Unit Element	Existing	Proposed
STPU	4.5	9
STD	4	3
INST	8	10

Panel DPCR

TCC Curve: TCC_083_PNL_DPCR

BKR_CANCER CENTER - ATS CR is fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

BKR_CANCER CENTER - CR not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The cable originating from BKR_DPCR - LCR11 does not meet the ampacity required by the NEC.

BKR_CANCER CENTER - CR

Trip Unit Element	Existing	Proposed
LTPU	1	0.8
STPU	4.5	8.4
STD	4	2
I ^{AS}	OFF	ON
INST	9	10

Panel LCR21

TCC Curve: TCC_084_PNL_LCR21

BKR_LCR21 - MAIN is not coordinated with the immediately downstream feeder protective devices.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

Panel DPEQ**TCC Curve: TCC_085_PNL_DPEQ**

BKR_CANCER CENTER - ATS EQ and BKR_CANCER CENTER - EQ are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The cable originating from BKR_DPEQ - ELEV1 does not meet the ampacity required by the NEC.

BKR_CANCER CENTER - EQ

Trip Unit Element	Existing	Proposed
LTPU	1	0.8
STPU	4.5	8
INST	1.5	8

Transformer EMERG-A [ET-1]

TCC Curve: TCC_086_TX_EMERG-A [ET-1]

The primary winding protective device for TX_EMERG-A [ET-1] is adequately sized at 300 Amps.

The secondary winding protective device for TX_EMERG-A [ET-1] is not coordinated to protect the transformer from damage.

The primary protective device is coordinated for the transformer inrush current.

In order to provide better protection to the transformer, the following settings changes for protective device RLY_GEN3 GEAR - NEW "E" A SWBD, BKR_XSB EMERG-A, and BKR_EMERG-A - MAIN are recommended.

RLY_GEN3 GEAR - NEW "E" A SWBD

Trip Unit Element	Existing	Proposed
TIME DIAL	1	10

BKR_XSB EMERG-A

Trip Unit Element	Existing	Proposed
LTPU	1	0.91
LTD	144	33
STPU	2.27	5.49

BKR_EMERG-A - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1	0.9
LTD	2	9
STPU	3	6
STD	0.2	0.5
INST	12	M1(14x)

Switchgear EMERG-A [SW#1]_ph

TCC Curve: TCC_087a_SWGR_EMERG-A [SW#1]_ph

BKR_EMERG-A - MAIN and BKR_EMERG-TIE A-B are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_EMERG-TIE A-B

Trip Unit Element	Existing	Proposed
LTPU	1	0.75
LTD	2	8
STPU	3	6
STD	0.2	0.4
INST	12	11

Switchgear EMERG-A [SW#1] ne**TCC Curve: TCC_087b_SWGR_EMERG-A [SW#1]_ne**

BKR_EMERG-A - MAIN and BKR_EMERG-TIE A-B are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_EMERG-A - MAIN

Trip Unit Element	Existing	Proposed
GFPD	0.25	0.32

Transformer BACKUP MED SURGE TX#1

TCC Curve: TCC_089_TX_BACKUP MED SURGE TX#1

The primary winding protective device for TX_BACKUP MED SURGE TX#1 is adequately sized at 400 Amps.

The secondary winding protective device for TX_BACKUP MED SURGE TX#1 is not coordinated to protect the transformer from damage.

The primary protective device is coordinated for the transformer inrush current.

In order to provide better protection to the transformer, the following settings changes for protective device BKR_EMERG A - BACKUP POWER are recommended.

The existing settings provide the best possible protection given the existing protective device, further improvements could be made with equipment changes.

The cable originating from BKR_EMERG A - BACKUP POWER does not meet the ampacity required by the NEC.

BKR_EMERG A - BACKUP POWER

Trip Unit Element	Existing	Proposed
LTPU	0.5	0.4
LTD	4	3
STPU	2.5	4.5

Panel DP EEG1

TCC Curve: TCC_090_PNL_DP EEG1

BKR_NP-LB-2 - ATS EQ1 and BKR_EMERG A - EQ1 ATS [DAHOD] are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_NP-LB-2 - ATS EQ1

Trip Unit Element	Existing	Proposed
STPU	3	7.5
STD	0.3	0.2

BKR_EMERG A - EQ1 ATS [DAHOD]

Trip Unit Element	Existing	Proposed
LTD	6	12
STPU	4	7.5

Panel DPE**TCC Curve: TCC_091_PNL_DPE**

BKR_EMERG A - DPE is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_EMERG A - DPE

Trip Unit Element	Existing	Proposed
STPU	4	4.5

Transformer EMERG-B [ET-2]

TCC Curve: TCC_092_TX_EMERG-B [ET-2]

The primary winding protective device for TX_EMERG-B [ET-2] is adequately sized at 300 Amps.

The secondary winding protective device for TX_EMERG-B [ET-2] is not coordinated to protect the transformer from damage.

The primary protective device is coordinated for the transformer inrush current.

In order to provide better protection to the transformer, the following settings changes for protective device RLY_GEN3 GEAR - NEW "E" B SWBD, BKR_XSB EMERG-B, and BKR_EMERG-B - MAIN are recommended.

RLY_GEN3 GEAR - NEW "E" B SWBD

Trip Unit Element	Existing	Proposed
TIME DIAL	1	10

BKR_XSB EMERG-B

Trip Unit Element	Existing	Proposed
LTPU	1	0.84
LTD	144	36
STPU	2.27	5.53

BKR_EMERG-B - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1	0.9
LTD	2	9.5
STPU	3	6
STD	0.2	0.5
INST	12	M1(14x)

Switchgear EMERG-B [SW#2]_ph

TCC Curve: TCC_093a_SWGR_EMERG-B [SW#2]_ph

BKR_EMERG-B - MAIN, BKR_EMERG B - C [TIE], and BKR_EMERG-TIE A-B are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_EMERG B - C [TIE]

Trip Unit Element	Existing	Proposed
LTPU	1	0.75
LTD	2	8
STPU	3	6
STD	0.2	0.4
INST	12	11

Switchgear EMERG-B [SW#2] ne**TCC Curve: TCC_093b_SWGR_EMERG-B [SW#2]_ne**

BKR_EMERG-B - MAIN, BKR_EMERG B - C [TIE], and BKR_EMERG-TIE A-B are selectively coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_EMERG-B - MAIN

Trip Unit Element	Existing	Proposed
GFPD	0.25	0.32

Panel DPE ELEV [DAHOD]

TCC Curve: TCC_094-1_PNL_DPE ELEV [DAHOD]

BKR_NP-LB-1 - ATS-ELEV and BKR_EMERG B - ELEV are not coordinated with the immediately downstream feeder protective devices. In order to provide better coordination, the following settings changes are recommended.

BKR_NP-LB-1 - ATS-ELEV

Trip Unit Element	Existing	Proposed
STPU	1.5	7.5

BKR_EMERG B - ELEV

Trip Unit Element	Existing	Proposed
STPU	1.5	7.5
STD	0.1	0.15

Panel DPE ELEV [DAHOD]**TCC Curve: TCC_094-2_PNL_DPE ELEV [DAHOD]**

BKR_NP-LB-1 - ATS-ELEV and BKR_EMERG B - ELEV are not coordinated with the immediately downstream feeder protective devices.

The revised TCC shows the effect of recommendations made in TCC_094-1_PNL_DPE ELEV [DAHOD].

Panel DPEPH**TCC Curve: TCC_095_PNL_DPEPH**

BKR_NP-LB-1 - ATS-EQ2 and BKR_EMERG B - ATS EQ2 are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The existing settings provide the best possible protection given the existing protective device, further improvements could be made with equipment changes.

BKR_NP-LB-1 - ATS-EQ2

Trip Unit Element	Existing	Proposed
LTD	6	24

Panel DPEXR**TCC Curve: TCC_096_PNL_DPEXR**

BKR_NP-LB-2 - ATS XR and BKR_EMERG B - ATS XR are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_EMERG B - ATS XR

Trip Unit Element	Existing	Proposed
STPU	1.5	3

BKR_NP-LB-2 - ATS XR

Trip Unit Element	Existing	Proposed
STPU	1.5	3

Panel ELEV [MS]**TCC Curve: TCC_097_PNL_ELEV [MS]**

BKR_DPE-DPN2 - ELEV ATS is fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

BKR_EMERG B - ELEV [MS] is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_EMERG B - ELEV [MS]

Trip Unit Element	Existing	Proposed
STPU	2.5	8.5
INST	2	2.5

Motor ELEV 1

TCC Curve: TCC_098_MTR_ELEV 1

It is the opinion of CEPES that motor MTR_ELEV 1 is not fully protected.

The existing settings provide the best possible protection given the existing protective device, improvements could be made with further investigation.

Motor ELEV 2

TCC Curve: TCC_099_MTR_ELEV 2

It is the opinion of CEPES that motor MTR_ELEV 2 is not fully protected.

The existing settings provide the best possible protection given the existing protective device, improvements could be made with further investigation.

Motor ELEV 3

TCC Curve: TCC_100_MTR_ELEV 3

It is the opinion of CEPES that motor MTR_ELEV 3 is not fully protected.

The existing settings provide the best possible protection given the existing protective device, improvements could be made with further investigation.

Motor ELEV 4

TCC Curve: TCC_101_MTR_ELEV 4

It is the opinion of CEPES that motor MTR_ELEV 4 is not fully protected.

The existing settings provide the best possible protection given the existing protective device, improvements could be made with further investigation.

Panel EQ2 [MS]**TCC Curve: TCC_102_PNL_EQ2 [MS]**

BKR_DPE-DPN2 - EQ2 ATS is fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

BKR_EMERG B - EQ2 [MS] is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_EMERG B - EQ2 [MS]

Trip Unit Element	Existing	Proposed
LTD	4	6
STPU	2.5	4.5
INST	2	4.5

Switchgear EMERG C

TCC Curve: TCC_103_SWGR_EMERG C

BKR_EMERG-C - MAIN and BKR_EMERG B - C [TIE] are fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

BKR_EMERG C -DAHOD LS GEAR TIE is not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

The cable originating from BKR_EMERG C -DAHOD LS GEAR TIE does not meet the ampacity required by the NEC.

BKR_EMERG C -DAHOD LS GEAR TIE

Trip Unit Element	Existing	Proposed
LTPU	1	0.75
LTD	4	24
STPU	2.5	5.5
INST	2	3

BKR_EMERG C - CR2

Trip Unit Element	Existing	Proposed
LTPU	1	0.5
LTD	4	9
STPU	2.5	13

BKR_EMERG C - LS

Trip Unit Element	Existing	Proposed
LTPU	0.75	0.9
LTD	4	10.5
STPU	8	9
INST	10	8.5

Panel DPE CR1

TCC Curve: TCC_104_PNL_DPE CR1

BKR_EMERG C - CR1 and BKR_CATHLAB - CR1 ATS are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_EMERG C - CR1

Trip Unit Element	Existing	Proposed
LTPU	0.5	0.6
LTD	4	11
STPU	2.5	M1(14x)
INST	2	4.5

Panel CR1HMP1**TCC Curve: TCC_105_PNL_CR1HMP1**

BKR_DPE CR1 - CR1HMP1 is not coordinated with the immediately downstream feeder protective devices.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

The cable originating from BKR_DPE CR1 - CR1HMP1 does not meet the ampacity required by the NEC.

Panel DPE CR2**TCC Curve: TCC_106_PNL_DPE CR2**

BKR_EMERG C - CR2 and BKR_CATHLAB - CR2 ATS are fully coordinated with the immediately downstream feeder protective devices except in the instantaneous region.

The revised TCC shows the effect of recommendations made in TCC_103_SWGR_EMERG C.

The cable originating from BKR_EMERG C - CR2 does not meet the ampacity required by the NEC.

Panel CR2HMP1**TCC Curve: TCC_107_PNL_CR2HMP1**

BKR_DPE CR2 - CR2HMP1 is not coordinated with the immediately downstream feeder protective devices.

The existing settings provide the best possible coordination given the existing protective device, further improvements could be made with equipment changes.

The cable originating from BKR_DPE CR2 - CR2HMP1 does not meet the ampacity required by the NEC.

Panel DPE LS**TCC Curve: TCC_108_PNL_DPE LS**

BKR_EMERG C - LS and BKR_CATHLAB - LS ATS are not coordinated with the immediately downstream feeder protective devices.

The revised TCC shows the effect of recommendations made in TCC_103_SWGR_EMERG C.

The cable originating from BKR_DPE LS - LSHMP1 does not meet the ampacity required by the NEC.

Switchgear MDPE [DAHOD]

TCC Curve: TCC_109_SWGR_MDPE [DAHOD]

BKR_MDPE - MAIN and BKR_MDPE - EMERG SW#3 TIE are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_MDPE - EMERG SW#3 TIE

Trip Unit Element	Existing	Proposed
LTPU	1	0.8
LTD	24	20
STPU	10	4
STD	0.4	0.3
INST	10	6

Switchgear DPCBH1

TCC Curve: TCC_110-1_SWGR_DPCBH1

BKR_NP-LB-1 - ATS-CB1 and BKR_MDPE - ATS CB1 are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_NP-LB-1 - ATS-CB1

Trip Unit Element	Existing	Proposed
LTPU	0.5	1
LTD	6	14
STPU	5	9

BKR_MDPE - ATS CB1

Trip Unit Element	Existing	Proposed
LTD	4	7

BKR_DPCBH1 - CBBH1

Trip Unit Element	Existing	Proposed
LTPU	1	0.75
LTD	7	10
STPU	6	8

Switchgear DPCBH1

TCC Curve: TCC_110-2_SWGR_DPCBH1

BKR_NP-LB-1 - ATS-CB1 and BKR_MDPE - ATS CB1 are not coordinated with the immediately downstream feeder protective devices.

The revised TCC shows the effect of recommendations made in TCC_110-1_SWGR_DPCBH1, TCC_112_PNL_CBGH1, TCC_114_PNL_CB1H1, and TCC_115_PNL_CB3H1.

Panel CBBH1

TCC Curve: TCC_111_PNL_CBBH1

BKR_DPCBH1 - CBBH1 is selectively coordinated with the immediately downstream feeder protective devices.

The revised TCC shows the effect of recommendations made in TCC_110-1_SWGR_DPCBH1.

Panel CBGH1**TCC Curve: TCC_112_PNL_CBGH1**

BKR_DPCBH1 - CBGH1 is not coordinated with the immediately upstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_DPCBH1 - CBGH1

Trip Unit Element	Existing	Proposed
LTPU	0.7	0.75
STPU	10	8

Panel CB2H1**TCC Curve: TCC_113_PNL_CB2H1**

BKR_DPCBH1 - CB2H1 is not coordinated with the immediately upstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_DPCBH1 - CB2H1

Trip Unit Element	Existing	Proposed
LTPU	0.7	0.75
STPU	10	8

Panel CB1H1

TCC Curve: TCC_114_PNL_CB1H1

BKR_DPCBH1 - CB1H1 is not coordinated with the immediately upstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_DPCBH1 - CB1H1

Trip Unit Element	Existing	Proposed
LTPU	0.7	0.75
STPU	10	8

Panel CB3H1**TCC Curve: TCC_115_PNL_CB3H1**

BKR_DPCBH1 - CB3H1 is not coordinated with the immediately upstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_DPCBH1 - CB3H1

Trip Unit Element	Existing	Proposed
LTPU	0.7	0.75
STPU	10	8

Panel CB5H1**TCC Curve: TCC_116_PNL_CB5H1**

BKR_DPCBH1 - CB5H1 is not coordinated with the immediately upstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_DPCBH1 - CB5H1

Trip Unit Element	Existing	Proposed
LTPU	0.7	0.75
STPU	10	8

Switchgear DPCBH4

TCC Curve: TCC_117_SWGR_DPCBH4

BKR_NP-LB-1 - ATS-CB4 and BKR_MDPE - ATS CB4 are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_NP-LB-1 - ATS-CB4

Trip Unit Element	Existing	Proposed
LTD	6	15.5

BKR_MDPE - ATS CB4

Trip Unit Element	Existing	Proposed
STPU	8	10

BKR_DPCBH4 - CDBGH4

Trip Unit Element	Existing	Proposed
STPU	8	10
STD	0.3	0.1

Switchgear DPLSH

TCC Curve: TCC_118_SWGR_DPLSH

BKR_NP-LB-1 - ATS-LS and BKR_MDPE - ATS LS are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_NP-LB-1 - ATS-LS

Trip Unit Element	Existing	Proposed
LTPU	0.4	0.8
LTD	6	4.5
STPU	9.5	8

BKR_MDPE - ATS LS

Trip Unit Element	Existing	Proposed
LTPU	0.75	1

Switchgear DPC BH3

TCC Curve: TCC_119_SWGR_DPC BH3

BKR_NP-LB-2 - CB3 and BKR_MDPE - ATS CB3 are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_NP-LB-2 - CB3

Trip Unit Element	Existing	Proposed
LTD	2	19
STPU	2	8.5
INST	4	7.5

BKR_MDPE - ATS CB3

Trip Unit Element	Existing	Proposed
STPU	8	10

Switchgear DPCBH2

TCC Curve: TCC_120_SWGR_DPCBH2

BKR_NP-LB-2 - ATS CB2 and BKR_MDPE - ATS CB2 are not coordinated with the immediately downstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_MDPE - ATS CB2

Trip Unit Element	Existing	Proposed
LTD	4	7

BKR_DPCBH2 - CBBH2

Trip Unit Element	Existing	Proposed
LTPU	1	0.75
LTD	7	10
STPU	6	8

Panel CBBH2**TCC Curve: TCC_121_PNL_CBBH2**

BKR_DPCBH2 - CBBH2 is selectively coordinated with the immediately downstream feeder protective devices.

The revised TCC shows the effect of recommendations made in TCC_120_SWGR_DPCBH2.

The cable originating from BKR_CBBH2 - CBBL2-2 does not meet the ampacity required by the NEC.

Panel CBGH2**TCC Curve: TCC_122_PNL_CBGH2**

BKR_DPCBH2 - CBGH2 is not coordinated with the immediately upstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_DPCBH2 - CBGH2

Trip Unit Element	Existing	Proposed
LTPU	0.7	0.75
STPU	10	8

Panel CB2H2**TCC Curve: TCC_123_PNL_CB2H2**

BKR_DPCPH2 - CB2H2 is not coordinated with the immediately upstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_DPCPH2 - CB2H2

Trip Unit Element	Existing	Proposed
LTPU	0.7	0.75
STPU	10	8

Panel CB1H2**TCC Curve: TCC_124_PNL_CB1H2**

BKR_DPCBH2 - CB1H2 is not coordinated with the immediately upstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_DPCBH2 - CB1H2

Trip Unit Element	Existing	Proposed
LTPU	0.7	0.75
STPU	10	8

Panel CB3H2**TCC Curve: TCC_125_PNL_CB3H2**

BKR_DPCBH2 - CB3H2 is not coordinated with the immediately upstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_DPCBH2 - CB3H2

Trip Unit Element	Existing	Proposed
LTPU	0.7	0.75
STPU	10	8

Panel CB5H2**TCC Curve: TCC_126_PNL_CB5H2**

BKR_DPCBH2 - CB5H2 is not coordinated with the immediately upstream feeder protective devices.

In order to provide better coordination, the following settings changes are recommended.

BKR_DPCBH2 - CB5H2

Trip Unit Element	Existing	Proposed
LTPU	0.7	0.75
STPU	10	8

Transformer EMERG-C [ET-3]

TCC Curve: TCC_127_TX_EMERG-C [ET-3]

The primary winding protective device for TX_EMERG-C [ET-3] is adequately sized at 300 Amps.

The secondary winding protective device for TX_EMERG-C [ET-3] is not coordinated to protect the transformer from damage.

The primary protective device is coordinated for the transformer inrush current.

In order to provide better protection to the transformer, the following settings changes for protective device RLY_GEN3 GEAR - NEW "E" C SWBD, BKR_XSB EMERG-C, and BKR_EMERG-C - MAIN are recommended.

RLY_GEN3 GEAR - NEW "E" C SWBD

Trip Unit Element	Existing	Proposed
TIME DIAL	1	10

BKR_XSB EMERG-C

Trip Unit Element	Existing	Proposed
LTPU	1	0.87
LTD	144	33
STPU	2.27	5.49

BKR_EMERG-C - MAIN

Trip Unit Element	Existing	Proposed
LTPU	1	0.9
LTD	2	9.5
STPU	3	6
STD	0.2	0.5
INST	12	M1(14x)